

Docket No. :0425-1218PUS1  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Tetsuya OKANO et al.

Application No.: 10/551,654  
Filed: July 10, 2006

Confirmation No.: 5662  
Art Unit: 1616

For: A COMPOSITION FOR PRODUCTION OF A  
STERILIZER AND A PROCESS FOR  
PRODUCING ORGANIC PERACID

Examiner: A. L. Fisher

**DECLARATION UNDER 37 C.F.R. § 1.132**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Noboru Matsuo, hereby declare as follows:

I am one of the co-inventors of the invention as described and claimed in the above-identified patent application.

I have carried out additional examples myself or under my direct supervision. Test procedures and results are shown below.

**Side-by-Side Comparison between the Present Invention and the Primary Reference**

The Examiner has cited U.S. Patent No. 5,827,447 to Tamura et al.(hereinafter, "Tamura '447") as the primary reference in a rejection under 35 U.S.C. § 103(a). I consider Example 11 of Tamura '447 to be the closest example to the present invention.

Enclosed herewith is Table A, which shows inventive Example 3-3 and Tests 1 and 2 as comparative examples. Test 1 was carried out using the same materials and methods as disclosed for Example 11 of Tamura '447. Test 2 was carried out using the same materials and methods as disclosed for Example 11 of Tamura '447, except triacetone was used in place of NOBS.

The obtained products were evaluated in the same way as Example 3-3 of the present specification. The results of all three examples are shown in Table A.

As shown in Table A, the number of remaining microorganisms with the inventive example is much less than the number with the comparative examples. As such, the present invention provides unexpectedly superior results.

#### Side-by-Side Comparison between the Present Invention and the Secondary Reference

The Examiner has cited U.S. Patent No. 5,869,440 to Kobayashi et al.(hereinafter, "Kobayashi '440") as the secondary reference in a rejection under 35 U.S.C. § 103(a). I consider Comparative Example 4 of Kobayashi '440 to be relative to the present invention.

Enclosed herewith is Table B, which shows inventive Example 3-3 and continued Example 3-3 with changed reaction temperatures and reaction times and Test 3 and continued Test 3 with changed storage temperatures and storage terms as comparative examples.

Test 3 was carried out using the same materials and methods as disclosed for Comparative Example 4 of Kobayashi '440, except changed storage temperatures and storage terms.

The obtained products were evaluated in the same way as Example 3-3 of the present specification. The results are shown in Table B.

As shown in Table B, the number of remaining microorganisms with the inventive example is much less than the number with the comparative examples. As such, the present invention provides unexpectedly superior results.

The undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S. Code 1001 and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

By: Noboru Matsuo Date: Dec. 18, 2009  
Noboru Matsuo

Table A

components	used materials	Example 3-3 of USSN 10/551654	Test 1 Example 11 of Tamura et al.	Test 2
BetaIn surfactant*			10.0	10.0
(A)	TriaceUn	5.0	-	2.0
	NOBS	-	2.0	-
(B)	H2O2	1.5	5.0	5.0
Organic phosphonic acid (Purity)	HEDP**	0.1	-	-
	EDTMP**	-	0.1	0.1
Alkaline pH adjusting agent	NaOH	2.0	-	-
Acidic pH adjusting agent	Phosphoric acid(85%)	5.0	-	-
	Sulfonic acid	-	very small amount	very small amount
Total		110.0	100.0	100.0
(A)/(B) molar ratio		0.52	0.04	0.08
Organic peracid concentration(ppm) after preparation		27000	500	500
pH of aqueous solution for sterilization (25°C)		3.7	2.0	2.0
Number of remaining microorganisms	Bacillus cereus IFO13494	<50	$1.8 \times 10^3$	$1.5 \times 10^7$
	Bacillus subtilis var. niger	<50	$2.6 \times 10^3$	$2.4 \times 10^7$

Note: \* is softazoline LSB. \*\* is Dequest 2010. \*\*\* is Dequest 2046

"1.5" as the amount of H2O2 of Example 3-3 is equivalent to "4.3 g" of Table 10 of the instant application. "4.3 g" of Table 10 is the amount of the 35 wt.% aqueous solution of H2O2. 4.3 g x 0.35% is equal to 1.5.

Table B

components		USSN 10/551654					Kobayashi et al.				
		Example 3-3					Test 3, Comparative Example 4				
(A)	Triacetin	5.0	the same components as Example 3-3					200 **	the same components as Test 3		
(B)	H <sub>2</sub> O <sub>2</sub>	1.5						275 **			
Organic phosphoric acid	HEDP*	0.1									
Alkali pH adjusting agent	NaOH sodium ortho-silicate	2.0						1.5 **			
Acid pH adjusting agent	85% phosphoric acid	5.0									
Total		110.0						100.00			
(A)/(B) molar ratio		0.52						0.11			
at the first step	Reaction temperature	25°C~33°C	←	←	←	←	←	25°C	←	←	←
	Reaction time	10 minutes	minutes	1 day	5 days	5 days	120	Just after	minutes	1 day	5 days
Storage of each solution	temperature										
Condition of Kobayashi's term											
Concentration of peracid after preparation (ppm)		27000	11000	1500	150	≒0		13000	180	≒0	5 days
pH of aqueous solution for sterilization(25°C)		3.7	3.7	3.1	3.0	3.0		10.5	9.5	9.1	≒0
Number of remaining B.cereus JFO13494		<50	<50	—	9.8x10 <sup>6</sup>	1.0x10 <sup>7</sup>		1.5x10 <sup>7</sup>	8.4x10 <sup>6</sup>	—	1.2x10 <sup>7</sup>
{CFU/mL} B.subtilis var.niger		<50	<50	—	2.9x10 <sup>7</sup>	3.3x10 <sup>7</sup>		4.0x10 <sup>7</sup>	3.1x10 <sup>7</sup>	—	3.8x10 <sup>7</sup>
		sterilizing test with a diluted aqueous solution having an organic peracid's concentration of 3000 ppm.					sterilizing test with a starting aqueous solution.				
		sterilizing test with a starting aqueous solution.					sterilizing test with a starting aqueous solution.				
		sterilizing test with a starting aqueous solution.					sterilizing test with a starting aqueous solution.				

\*: is Dequest 2010

\*\* the amounts of (A), (B) and Alkali pH adjusting agent are recited for 100 parts by weight of the total of (A) and (B).

← means the same as the left-sided term